

Application Serial No.: 10/621,478  
Applicants: James Gary Pruett et al.  
Response Filed: October 24, 2005  
Response to Office Action Date: June 24, 2005

**III. REMARKS**

United States Serial No. 10/621,478 was filed on July 17, 2003. Claim 46 has been amended by the present response. In view of the amendments and remarks set forth herein, Applicants respectfully request reconsideration and allowance of claims 42-52.

**Restriction Requirement**

The Examiner required restriction under 35 U.S.C. § 121 to one of the following:

Group I: claims 1-23, drawn to a continuous deposition furnace, classified in class 118, subclass 718.

Group II: Claims 24-34, drawn to a method of depositing pyrocarbon, classified in class 427, subclass 249.2.

Group III: Claims 35-41, drawn to carbon coated substrate material, classified in class 428, subclass 542.8.

Group IV: Claims 42-52, drawn to a continuous roll fibrous substrate, classified in class 422, subclass 59.

During a telephone conversation between Examiner Cole and Joseph G. Curatolo on December 13, 2004, a provisional election with oral traverse was made to prosecute the invention of Group IV, claims 42-52.

Applicants hereby confirm the provisional election of the claims of Group IV (claims 42-52) for prosecution in the present invention, and respectfully reserve the right to file claims 1-41 in one or more divisional applications.

Application Serial No.: 10/621,478  
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**35 U.S.C. §112**

Claim 46 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. It is specifically alleged that the language "sheet-like" and "a thin shape" is not clear.

Claim 46 has been amended to read as follows:

"The continuous roll composite material of claim 42, wherein the fibrous substrate material comprises a substantially flat sheet."

Applicants respectfully submit that a substantially flat sheet is clear to one having ordinary skill in the art. Applicants, therefore, respectfully request withdrawal of the 35 U.S.C. §112 rejection.

**Obvious Type Double Patenting**

Claims 42-52 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of copending Application No. 11/094,932 (Application '932) in view of U.S. Patent No. 6,155,432 (Wilson). It is alleged that Application '932 teaches uniform pyrolytic carbon and that Wilson teaches a filter material with having a layer of pyrolytic carbon thereon. It is therefore alleged that it would have been obvious to one having ordinary skill in the art to have formed the filter material of Wilson using the pyrolytic carbon of Application '932. Applicants respectfully traverse this provisional rejection.

Application Serial No.: 10/621,478

Applicants: James Gary Pruett et al.

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Claims 42-52 of the present application are directed to a continuous roll composite material comprising a fibrous substrate having a uniform pyrocarbon addition that is coated onto the fibrous substrate, and/or infiltrated into the porosity of the fibrous substrate.

Application '932

By contrast, Application '932 discloses a substantially pure and finely divided bulk pyrolytic carbon. The process for preparing the pure and finely divided bulk pyrolytic carbon comprises depositing carbon on high surface area "seed" particles. According to the teachings of Application '932, the deposition of carbon on the high surface area "seed" particles results in extremely high mass deposition rates within a short period. The result is a substantially pure and finely divided bulk pyrocarbon, in a granular form, where the high surface area inorganic "seed" particle becomes an insignificant portion of the whole amount of pyrolytic carbon deposited on the surface of the particle.

The Office Action alleges that claims 1 and 21 of Application '932 disclose filter materials formed from the pyrolytic carbon. Applicants disagree with this allegation. Claim 1 is directed to a pure and finely divided bulk pyrocarbon, not a filter material. Thus, claim 1 defines a particulate product in a very fine granular form. Application '932 discloses that the finely divided bulk pyrocarbon can be used a filler for plastics, rubbers, electrodes and reinforced composites. Claim 21 is directed to such a "filler" comprising the finely divided bulk pyrocarbon, which is a very fine granular material.

Wilson

Wilson discloses a filter material comprising a blend of inorganic fiber and inorganic fiber whiskers. The filter material is formed by combining inorganic fibers, inorganic fiber whiskers, binder and water to form a slurry, removing the excess water from the slurry, and drying the slurry to form a paper. Wilson discloses optionally depositing a thin layer of pyrolytic carbon on the filter paper after it is dried.

Application Serial No.: 10/621,478

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Applicants submit that there is no motivation to combine Application '932 with Wilson, and that the proposed combination would render Application '932 and Wilson unsuitable for their respective intended purposes.

According to Application '932, the substantially pure and finely divided bulk pyrocarbon is produced by depositing carbon on high surface area particulates. The filter paper of Wilson is not analogous to a high surface area particulate material. Therefore, the extremely high carbon mass deposition rates disclosed in Application '932 cannot be achieved by using the filter paper of Wilson as the target for carbon deposition. *Assuming arguendo*, a high carbon mass deposition rate could be achieved, this rapid deposition of carbon would create a thick layer of carbon on the surface of the filter material of Wilson, which would modify the highly permeable, high flow, and low pressure drop filter characteristics of the filter material.

Finally, Application '932 discloses a pure and finely divided bulk pyrocarbon in a very fine granular form, and Wilson discloses a filter material in the form of papers, felts, plates, tubes, and cylinders. However, neither Wilson nor Application '932, when taken individually or in combination, teach or suggest the limitation of "a continuous roll composite material." Applicants, therefore, respectfully request that the provisional obviousness-type double patenting rejection is not appropriate and should be withdrawn.

**35 U.S.C. §102(b)**

Claims 42-52 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,155,432 ("Wilson"). Applicants respectfully traverse the rejection of claims 42-52.

Application Serial No.: 10/621,478

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Claim 42 of the present application recites "A continuous roll composite material comprising a fibrous substrate having a pyrocarbon addition that is (i) coated onto the fibrous substrate and/or (ii) infiltrated into the porosity of the fibrous substrate, wherein the variation in the mass of the pyrocarbon addition is less than about 20 weight percent, as determined by measuring sections of the composite material having the dimensions of 2 square feet taken at various positions along the length of the continuous roll."

To establish anticipation of a claim, each and every element as set forth in the claim must be found, either expressly or inherently described, in the single prior art reference. See Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The preamble will be given the effect of a limitation if it gives life, meaning, and vitality to the claim and distinguishes the claim or count over the prior art. See Kropa v. Robie, 187 F.2d 150, 152, 38 C.C.P.A. 858, 861-62 (C.C.P.A. 1951). Furthermore, any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation. See, e.g., Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989).

The preamble of claim 42 recites "a continuous roll composite material." The phrase "a continuous roll composite material" found in the preamble gives meaning to the claim, as it further defines the structure of the claimed invention. Consequently, the phrase "a continuous roll composite material" cannot be ignored. While Wilson teaches that the filter material may be in the form of papers, felts, plates, tubes and cylinders, there is no disclosure or teaching that the filter material comprises "a continuous roll composite material". As each and every limitation of claim 42 of the present application is not disclosed by Wilson, claim 42 is not anticipated by Wilson. Claims 43-52 depend from independent claim 42 and therefore are also not anticipated by Wilson. Applicants therefore respectfully request withdrawal of the 35 U.S.C. §102(b) rejection.

Application Serial No.: 10/621,478  
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**35 U.S.C. §103 Rejection**

Claims 42-52 have also been rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,155,432 ("Wilson"). Applicants respectfully traverse this rejection.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In determining the differences between the prior art and the claims, the question under 35 U.S.C. §103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. See Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 U.S.P.Q. 871 (Fed. Cir. 1983). The distilling of an invention down to the "thrust" of an invention disregards the requirement of analyzing the subject matter "as a whole." W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). See also Bausch & Lomb v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 447-49, 230 USPQ 416, 419-20 (Fed. Cir. 1984).

In this case, the subject matter of the invention has not been considered as a whole. The limitation of "a continuous roll composite material" has been completely ignored in the Office Action analysis. Ignoring the "continuous roll" aspect of the invention and focusing on the limitation regarding the variation in the mass of the coating improperly emphasizes only one aspect of the claimed invention. As discussed above, while Wilson teaches that the filter material may be in the form of papers, felts, plates, tubes and cylinders, there is no disclosure, teaching, or suggestion that the filter material may be in the form of "a continuous roll composite material". As Wilson does not disclose or suggest a continuous roll composite material, a *prima facie* case of obviousness has not been established. Applicants, therefore, respectfully request that the rejection of claims 42-52 under 35 U.S.C. §103 be withdrawn.

Application Serial No.: 10/621,478  
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In view of the above remarks, Applicants respectfully request that the rejections of 35 U.S.C. §§102, 103, and 112 be withdrawn and that the Examiner issue a formal notice of allowability directed to claims 42-52.

Should the Examiner have any questions, Applicants' undersigned attorney would welcome a telephone call.

Respectfully submitted,



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